# SOME OPISTHOBRANCHS FROM SOUTHERN QUEENSLAND

By ROBERT BURN*

Text figures 1-14.

## SUMMARY

Of 14 opisthobranch species reported from southern Queensland, two are new species, *Chelidonura conformata, Placida fralila* and nine are new records for the State. The nomenclature of the other species is brought up to date.

## INTRODUCTION

In a recent paper, Kenny (1960) recorded thirty-one species of opisthobranchs collected by himself and others in Queensland waters. This is by no means the total number of opisthobranchs to be found in the area. From a small collection taken at Greenmount, Rainbow Bay, and Pt. Danger (Schnapper Rocks), Coolangatta, a further eleven species can be added to the Queensland fauna. Among these are two new species and one new record to the Australian fauna. An additional species is added from the Capricorn Group.

This research is part of a study of the Australian Opisthobranchia. The writer gratefully acknowledges the assistance of a grant from the Science and Industry Endowment Fund, C.S.I.R.O., Melbourne. The abbreviations Q.M., A.M. and N.M.V. are for Queensland Museum, Australian Museum and National Museum of Victoria respectively.

## SYSTEMATIC SECTION

### ORDER CEPHALASPIDEA
### SUBORDER BULLACEA
### FAMILY BULLIDAE

### *Bulla ovulum* Angas.

Text figs. 1-4.

*Bulla ovulum* Angas, 1867:227, ex Gould ms.
*Bulla angasi* Pilsbry, 1893:347.
*Bulla punctulata* Hedley, 1910:370, not of A. Adams, 1850.
*Quibulla angasi.* Iredale, 1929:350, pl. 38, fig. 8.
*Quibulla ovulum.* Iredale, 1937:258; Iredale and McMichael, 1962:88.

*Material*: South end of Rainbow Bay, Coolangatta, 2 September, 1964, 1 dead shell, R. Burn leg.; Q.M. reg. no. MO2947.

Ex pisces, Capricorn Group, January, 1959, 1 shell with remains of animal, P. Colman leg.; A.M. C.62872.

*Comments*: The two shells are not greatly alike in shape or solidity, but the patterns are nearly identical. The Rainbow Bay shell (text fig. 1a-2a) is very solid, well rounded in shape and mottled brown with three dark brown bands; it is 20 mm. long and 13.5 mm. broad. The ex pisces shell (text fig. 1b-2b) has a more fragile appearance, thin lip, more elongated cylindrical shell and is mottled pale brown with two obsolete dark brown bands; it is 20 mm. long and 12 mm. broad.

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The jaws are large, brown in colour and composed of closely packed hexagonal pillars. The radula (text fig. 3) has 26 rows of 1.2.1.2.1 teeth. The rachidian (*a*) is broad, crescent shaped and taping to the sides, with a small single or double median cusp and one large and four smaller denticles each side. First lateral tooth with long cusp and three denticles each side, second lateral with seven denticles. Marginal plate longer than wide, five sided. The oldest six rachidian teeth lack lateral and marginal teeth. The three gastral plates are dark brown above, greenish with two white spots below. Shape pyramidal with folds at each end and a pair of ridges on one side. A few horny spines are found in front of and behind the gastral plates. A large conical oesophageal diverticulum projects from the oesophagus behind the pharynx.

The penis (text fig. 4) is exceedingly long (10 mm. overall). The outer one-third is a slender atrium (*d*), the inner two-thirds is wider and contains the penis (*b*) The distal bulb is pear-shaped and contains the transverse intensely coiled prostate duct (*c*). There is no terminal caecum as in *B. gouldiana* Pilsbry, 1893 (Marcus, 1961:5, pl. 1, fig. 4).

*Discussion*: Iredale (1937:259) states that the shell of *B. ovulum* is never banded, merely mottled and clouded with dark and light brown. Otherwise, I believe the present specimens to be identical with the Sydney Harbour species and a new record by this name at least for Queensland. Hedley regarded this species as a synonym of *B. punctulata* A. Adams (1850:577; Iredale, 1929:350) and recorded it under the latter name in his Queensland list (1910:370).

In the literature, four different species have their radulae figured. *B. striata* (Bruguiére, 1792) (Marcus, 1955, pl. 1, fig. 3), *B. gouldiana* Pilsbry, 1893 (Marcus, 1961, pl. 1, fig. 3), *B. ampulla* (Linné, 1758) and *B. vernicosa* Gould, 1859 (Habe, 1950, pl. 3, fig. 15, 16) each have the rachidian curved and truncate at the sides, not crescentic and tapering. The marginal plate appears to be larger than in any of these species.

According to the literature the penis of *B. ovulum* has a longer atrium than other species of the genus (Marcus, 1957:395, fig. 6; 1961:5, pt. 1, fig. 4).

### *Bulla orientalis* Habe.

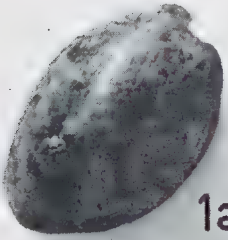
Text figs. 5-8.

*Bulla punctulata* Hedley, 1910:379, non A. Adams, 1850.
*Bulla peasiana* Kuroda, 1941:133, pl. 3, fig. 47, non Pilsbry, 1893.
*Bulla orientalis* Habe, 1950:21, pl. 3, fig. 10.

*Material*: Ex pisces, Capricorn Group, January, 1959, 1 shell with remains of animal, P. Colman leg.; A.M. C.63082.

*Comments*: The only shell (text fig. 5-6) is thin, the lip fragile, well rounded; the colour is pinkish brown with numerous rounded white spots which are shaded by dark brown spots and tails on the left. It measures 16.5 mm. long and 10 mm. wide.

The jaws are small, dark brown and composed of smaller and shorter closely packed hexagonal elements. The radula (text fig. 7) has the formula 20 rows of 1.2.1.2.1, the oldest two rows of which lack marginals. The rachidian (*a*) is broad, well curved with truncated sides. The cusp is larger than in *B. ovulum* as are also the first two denticles on each side.



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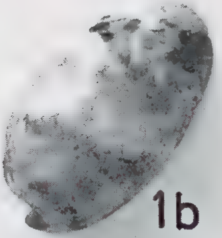

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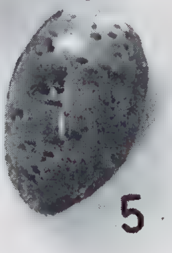

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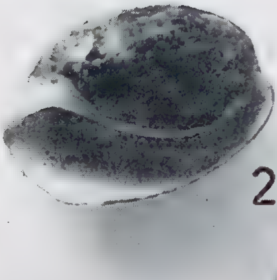

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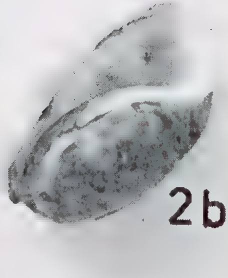

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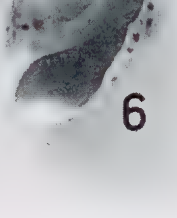

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The remaining three denticles on each side become smaller. The first lateral has three denticles each side of the cusp, the second six denticles. The marginal plate is small, quadrate. The gastral plates are rather sharper and more ridged than in *B. ovulum*; two pairs of white spots mark the bases. A few horny spines are present between the ends of the gastral plates. The gizzard was full of foraminiferal sand.

The male copulatory organ (text fig. 8) has a shorter atrium (*d*) than in *B. ovulum*. The penis (*b*) is wider and three times as long as the atrium. The distal bulb is slender and contains vertical folds of the prostate duct (*c*) in its low part. A bigger terminal sac or seminal vesicle (*i*) as in *B. striata* (Marcus 1957:395, fig. 6 *cn*) fills the inner part of the distal bulb.

*Discussion*: This shell is more ovoid than the type figure (loc. cit) and only half the length. The colour patterning is, however, so distinctive as to exclude any other identification. Without the examination of Hedley's and Iredale's Queensland and New South Wales "punctulate" species (Iredale, 1929:350), it is impossible to say to which *B. orientalis* belongs. Certainly *B. orientalis* is a good species and its patterning will allow its ready recognition. The question of the "punctulate" species of eastern Australia deserves early attention.

## SUBORDER PHILINACEA

### FAMILY DORIDIIDAE

### *Doridium taronga* (Allan).

Text figs. 9-10.

*Aglaia taronga* Allan, 1933:444, pl. 56, fig. 1-3.
*Aglaia taronga* Allan, 1950:217.
*Aglaia taronga*. Burn, 1957:117, fig. 2.
*Doridium taronga*. Iredale and McMichael, 1962:89.
*Doridium taronga*. Burn, 1965: in press.

*Material*: South end of Rainbow Bay, Coolangatta, September. 1964, 1 specimen crawling in shallow pool at low tide, Q.M. reg. no. MO.2948.

*Description*: The living slug (text fig. 9) was 14 mm. in length. The body colour was pale fawn everywhere with brown and darker reticulations that in places hide the body colour. There were two short curved yellow stripes each side of a long pale fawn median stripe on the cephalic shield. The edges of the parapodia were brown, submarginally yellow. The parapodia and sole were paler than the dorsal surface.

The animal was rather elongate with small parapodia, a long posteriorly pointed and upturned cephalic shield and a shorter visceral hump. Two folds of flesh project posteriorly from the visceral hump; of these the left one was longer and broader.

The male copulatory organ (text fig. 10) of a large example from Rosebud, Port Phillip Bay, Victoria (leg. F. and M. Murray, 15.IV.1963) was examined by dissection. In outward appearance, the organ is very similar to that of *Doridium ceylonica* (White, 1946:171, fig. 5). In detail it is far more complex. A thin walled transparent penial sheath envelops the whole copulatory organ except for the projecting prostate gland (*c*). The penis (*b*) is a large spade-like lamina, folded twice upon itself. The major fold attains the male aperture. The minor fold is much shorter.

The edge furthermost from the minor fold is rather thicker than elsewhere and shortly inside the margin is markedly hollowed to form a seminal furrow (*h*). The inner end of the groove disappears into the penis at the base of posterior coils. The coils (*f*) are two in number but unlike those of *D. ceylonica* they have no "segmented" outer side. Instead the coils are an open spiral channel with closely folded over walls.

A broad flat duct (*g*) leaves the base of the coils in the direction of the male aperture, then skirts the anterior edge of the penial sheath to open along the inner end of the major penial fold. The glandular prostate gland (*c*) projects freely beyond the penial sheath. Its duct is stout and follows the same course as the duct from the coils. The whole penial lamina is translucent; in the integument small straight spicules are visible, set closely but haphazardly just below the surface. In penial tumescence these spicules would protrube at least so far as to provide a sandpaper surface.

*Discussion*: *D. taronga* is a rarity among the Australian Doridiidae. Other than the type specimen from Sydney Harbour (Allan, 1932) there are only three known specimens, respectively two from Port Phillip Bay, Victoria (Burn, 1957:117; 1965: in press), and the present specimen. The colour pattern distinguishes the species from others of the genus presently recorded, i.e., red *D. sanguinea* (Allan, 1933:445), black *D. cyanea* Martens, 1880 (Allan, 1950:217) and small black *D. queritor* (Burn, 1951:117).

It is indeed unfortunate that so little is known of the anatomy of the Doridiidae. Colour which might be so distinctive and specific in life is so readily lost in preserved animals. From a study of the literature on this family, the form of the male copulatory organs appears to have decisive specific value. Thus it is necessary only to consider *D. taronga* with *D. ceylonica* which is warm grey with lighter blotches, anterior shield marbled with dark lines, anterior edge of head and foot edges dark (White, 1946:167). Though very similar in gross design, the male copulatory organs of *D. ceylonica* are more simple in detail.

*D. taronga* has a large pad of sensorial cilia on each side of the mouth as is so often depicted in species of *Chelidonura*. *D. queritor* (Burn, 1957:117) also has pads of sensorial cilia. It would seem therefore that this characteristic must be regarded as of family value.

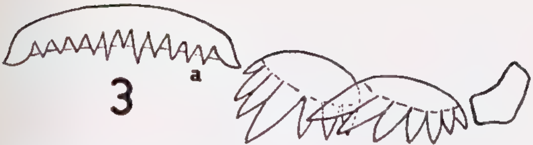
*D. taronga* is a new record for Queensland. *D. marmorata* Smith (1884:87) which is listed among the Queensland fauna (Hedley 1910:370) is a synonym of the common Indo-Pacific *D. cyanea* Martens, 1879 (Macnae, 1962:193).

### *Chelidonura conformata sp. nov.*

Text figs. 11-12.

*Material*: Pt. Danger (Schnapper Rocks), Coolangatta, August, 1964. 1 specimen (holotype) crawling on sand bottom of a high water pool. Q.M. reg. no. MO.2949.

*Description*: The living specimen (text fig. 11) was about 15 mm. in length including the 6 mm. long whip-like tail flagellum. As preserved, it is 11 mm. long, 3.6 mm. wide, 3 mm. high and the tail is 3.5 mm. long. The body was brown over all the exposed surfaces, including the sole, everywhere with a dark brown fine reticulate patterning. Across the anterior of the head was a broad white W-shape mark, the tail of the cephalic shield bears a wide transverse white bar and the base of the tail flagellum is dorsally white. A few small patches of dark red



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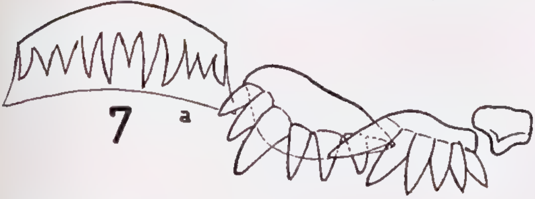

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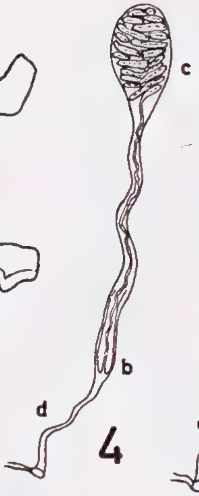

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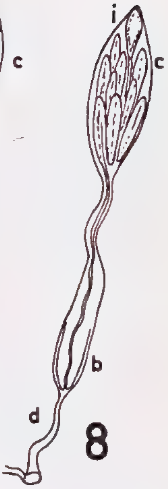

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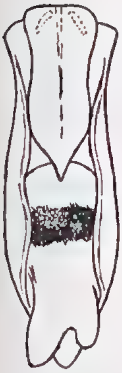

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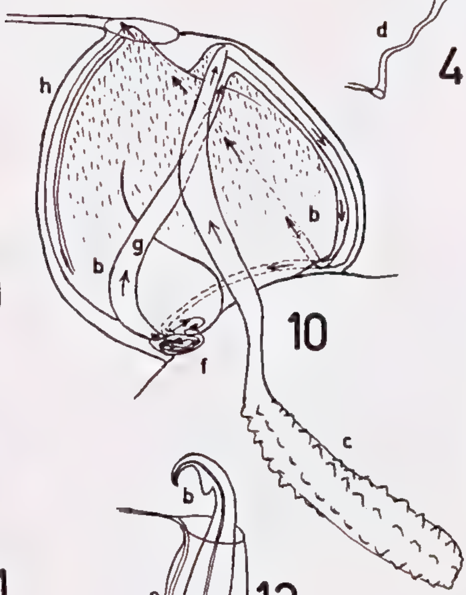

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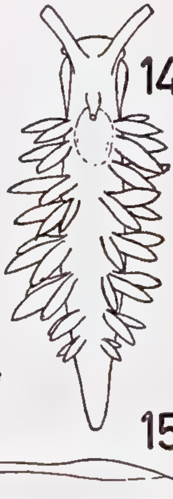

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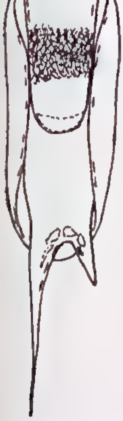

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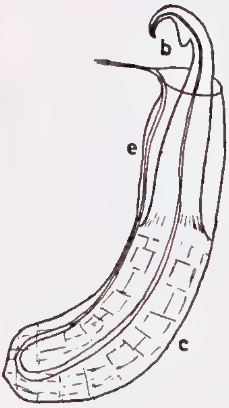

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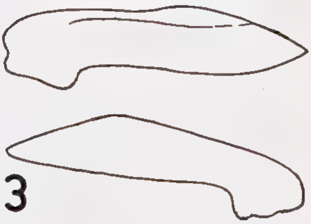

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were spaced along the anterior lateral margins of the cephalic shield, along the parapodial margins and about the base of the tail flagellum. The preserved holotype is a dull brown with lighter patches where formerly white.

The animal had the usual slender form of *Chelidonura* with an exceptionally long whip-like left tail flagellum. The shell was not examined owing to decalcification in formalin. The tip of the penis protruded from the male aperture to the right of the mouth. After dissection, the whole male copulatory organ (fig. 12) is seen as a small cylindrical apparatus from which projects the tapering penis (*b*) with curled tip below which is developed a fleshy keel-like barb. The seminal groove (*e*) runs as a high walled ciliated furrow along the wall of the penial sheath then turns and runs along the side of the penis. The base of the penis is soft and pulpy; this is evidently the prostate gland (*c*).

*Discussion*: *C. conformata* is the first record of this genus from Queensland and only the third from Australia. *C. hirundinina* (Quoy and Gaimard, 1833) is recorded from Sydney Harbour, New South Wales, as *C. adamsi* Angas (1867:116), and Allan (1950:218) reported *C. fulvipunctata* Baba (1938:3) from Angourie, northern New South Wales. The latter record probably covers several species as the writer has in his collection at least four species of *Chelidonura* from this locality.

*C. conformata* closely resembles *C. inornata* Baba (1949:22, 124) which occurs on the northern coastline of New South Wales at Minnie Waters and Angourie. This species has blue spotting on the parapodia and sole, black cephalic shield and visceral hump and a white and yellow anterior margin to the head. Its penis also differs from that of *C. conformata* by being conical with a deep channel-like seminal groove. The shell of *C. inornata* is large, solid and dark red.

Though convenient, the allocation of species to either *Doridium* (no tail flagella) or *Chelidonura* (either two or one tail flagella) is often arbitrary as there are no other decisive characteristics to justify the generic separation. Even Marcus' diagnostic of *Chelidonura*, penis absent or warty (1961:8) applies equally well to *Doridium* (vide White, 1946; figs. 8, 13). As several different schemes of penial organization are known in the family, a sectional division based on this could be advanced. However, until further study of the Australian species is undertaken, no attempt to define sections will be attempted. It is enough to say that *C. conformata* and *C. inornata* belong to one section, *D. lineolata* (H. & A. Adams, 1854; White, 1945:97) and *C. phocae* Marcus (1961:8) to another.

## FAMILY ANASPIDEA

## ORDER APLYSIIDAE

### *Aplysia* (*Pruvotaplysia*) *parvula* Mörch.

*Aplysia parvula* Mörch, 1863:22.

*Aplysia norfolkensis* Sowerby, 1869, pl. 10, fig. 42.

*Aplysia norfolkensis*. Allan, 1950:212, fig. 3.

*Aplysia* (*Pruvotaplysia*) *parvula*. Eales, 1960:287.

*Material*: Greenmount, Coolangatta, August, 1964, 3 specimens browsing on brown algae in rock pools, Q.M. reg. no. MO2950.

*Discussion*: A new record for Queensland. This tropical and subtropical species has a circum-global distribution that already includes New

South Wales, Victoria, Tasmania and South Australia. The Queensland animals are light brown in colour with white punctae and mottles. The parapodia and foot are margined with black and white.

### *Aplysia* (*Varria*) *dactylomela* Rang.

*Aplysia dactylomela* Rang, 1828:56, pl. 12.
*Aplysia tigrina* Rang, 1828:57.
*Aplysia angasi* Sowerby, 1869, pl. 8, fig. 35.
*Tethys tigrina*. Hedley, 1910:370.
*Aplysia angasi*. Hedley, 1923:314, pl. 33.
*Aplysia angasi*. Allan, 1950:212, pl. 28, fig. 13.
*Aplysia dactylomela*. Eales, 1960:307, frontispiece.

*Material*: Greenmount and south end of Rainbow Bay, Coolangatta, August, 1964, many specimens browsing on alga on rocks at low tide, Q.M. reg. no. MO2951.

*Discussion*: Hedley has already reported this species as *Tethys tigrina* from Queensland (1910:370). His later colour plate of a Sydney specimen (1923, pl. 33) shows the distinctive black rings on the outside of the parapodia and the black patches on the innerside. The present specimens had a suffusion of pink along the parapodial edges.

### *Aplysia* (*Varria*) *extraordinaria* (Allan).

*Tethys extraordinaria* Allan, 1932:314, pl. 35, fig. 7-8.
*Aplysia extraordinaria*. Eales 1960:312.

*Material*: South end of Rainbow Bay, Coolangatta, August, 1964, specimen crawling on mud bottom of shallow pool at low tide, Q.M. reg. no. MO2952.

*Description*: The living slug was only 30 mm. long. The body was pale brown with stellate yellowish punctae on the sides and body and small cream patches along the parapodial edges. A few small darker areas were scattered over the body and the shell mantle was brownish with dark and light rays. The pharynx shows in the neck as an orange mass.

The animal is slender with large blade-like oral tentacles, a long neck, small short rhinophores at mid-length of the neck and large thin parapodia joined low down upon the tail. The shell mantle and anal siphon are small.

*Discussion*: The animal swam freely in a tank of water. To do this the front edge of the oral tentacles are lifted to a near horizontal plane, the neck is flexed and the parapodia start their front to rear synchronous flappings or undulations.

*A. extraordinaria* is hitherto known in Australia only from Sydney Harbour and Port Hacking. This record extends its range considerably northward. The species is particularly characterized by its long slender neck with small short rhinophores at mid-length and the large swimming parapodia joined low down upon the tail. The shape of the radular teeth appears to be of a specific value also (Eales, 1960:314, fig. 23, *d*).

### *Aplysia* (*Aplysia*) *juliana* Quoy and Gaimard.

*Aplysia juliana* Quoy and Gaimard, 1832:309.
*Aplysia iuliana*. Eales, 1960:363.

*Material*: Pt. Danger (Schnapper Rocks) and Greenmount, Coolangatta, August, 1964, 5 specimens browsing on algae in rock pools, Q.M. reg. no. MO2953.

*Discussion*: Eales (1960:386-387) lists the British Museum (Natural History) specimens of *A. juliana* and therein first reported the species from New South Wales and Victoria. *A. juliana* is a tropical and subtropical circum-global species. The present specimens were dark reddish-brown in colour with white punctae on the sides and body; the sole was darker and posteriorly developed into a sucking disk. A white line on each side of the head runs from the oral tentacle base to the rhinophore base and surrounds the eye. The parapodia are joined high up over the tail.

## ORDER SACOGLOSSA

## FAMILY ELYSIIDAE

### *Elysia australias* (Quoy and Gaimard).

Text fig. 13.

*Actaeon australis* Quoy and Gaimard, 1832:317, pl. 24, fig. 18-20.
*Elysia coodgeensis* Angas, 1864:69, pl. 6, fig. 9.
*Elysia australis*. Allan, 1947:438.
*Elysia australis*. Allan, 1950:225.

*Material*: Pt. Danger (Schnapper Rocks), Coolangatta, August, 1964, 4 specimens, Q.M. reg. no. MO2954.

*Description*: Alive, this species grows to 15 mm. in length though generally it is less than 10 mm. The colouration is as shown by Angas (1864, pl. 6, fig. 9), body everywhere green, parapodia edged with black, inside which is a row of white patches. The rhinophores and tail are tipped with black, and there is a short median stripe of black on the head between the rhinophores. Some specimens observed but not preserved were very dark green in colour.

The body is slender and the parapodia long, narrow and not greatly undulated at the edges. Rhinophores rather long, slender and auriculate. The anal papilla opens at the right anterior side of the pericardium.

The radula consists of 8 teeth in the ascending series and 23 in the descending. Each tooth (text fig. 13) is entirely smooth, very slender in plan and chisel pointed in profile.

The penis is long, tapering and coiled in a circle. It lies in a large pouch below and behind the right rhinophore.

*Discussion*: Green colouration is not uncommon among *Elysia* spp. But the distinctive black margin of the parapodia, the black tips of the rhinophores and tail and the black medium stripe on the head separates *E. australis* from any other species. *E. australis* is further characterized by the large number (31) of teeth in the radula, their shape and lack of denticulations or serrulations.

*E. australis* is a new record for Queensland. It has previously been recorded from Coogee, south of Sydney (Angas, 1864:69), northwards to Angourie, Clarence River district (Allan, 1947:438). This record extends the range a further 100 miles northwards.

## FAMILY HERMAEIDAE

### *Placida fralila* sp. nov.

Text figs. 14-15.

*Material*: Greenmount, Coolangatta, 21-22 August, 1964, 4 specimens collected on the green alga *Codium* hanging from large boulders, Q.M. reg. no. MO2955 (holotype), Q.M. reg. no. MO2956. (1 paratype), N.M.V. reg. no. F25650 (2 paratypes).

*Description*: The living slugs (text fig. 14) were about 5 mm. in length, as preserved they are 2-3 mm. long. At first glance, the animal appears to be wholly dark green. In detail it is translucent yellowish with the dark green (identical with algal food habitat) liver branches and ducts shining through the integument. The cerata contain thick dark green branching liver ducts and thinner twisted yellowish albumen ducts. The preserved animals are pale green.

The body is rather slender. The head rounded in front and the short tail tapering behind. The foot is anteriorly rounded. The corners somewhat broader than the sole. Rhinophores cylindrical, auriculate, distally truncate. Cerata rather long, largest up to 2 mm. in length, set in eight oblique rows of 2-3 on each side. Microscopic examination of preserved cerata indicates that the liver duct has many small short branches each dilated and ramified at the end. The yellowish albumen ducts visible in the living slugs could not be traced in the preserved material.

The radula has 9 teeth in the ascending series and 20 or more in the descending spiral series. Each tooth (text fig. 15) has a slender cusp and very broad base; in profile, the cusp has a long point and the base is short.

A penial stylet was not determined.

*Discussion*: *Placida* Trinchese, 1876, differs from *Hermaea* Lovén, 1841, in having (i) ducts of the albumen gland as well as liver branches in the cerata, (ii) three genital apertures (triaulic) and (iii) a penial stylet (Pruvot-Fol, 1954:185-6). Species apparently correctly assigned to *Placida* are the type species *P. viridis* Trinchese, 1873 (Pruvot-Fol, 1954:187), *P. tardyi* Trinchese, 1876 (Pruvot-Fol, 1954-187), *Hermaea dendritica* (Alder and Hancock, 1843) (Pruvot-Fol, 1954-186), *Hermaea aoteana* Powell (1937:123), *Hermaea capensis* Macnae (1954:59) and *Hermaea dendritica* Baba (1955:10,41). The Japanese *H. dendritica* should be renamed as its radular teeth are not identical in shape with that of the European and west Atlantic species (vide Bergh, 1886, pl. 1, fig. 9-10; Vayssiere, 1888, pl. 6, fig. 95; Pruvot-Fol, 1954, fig. 71, *i*).

*P. fralila* appears to have fewer series of cerata than any of the above mentioned species, fewer radular teeth and these somewhat differently shaped. *P. aoteana* from New Zealand is in geographical terms the nearest species but has more slender attenuated teeth and many more cerata than the Australian species. There is also a larger pale green undetermined species of *Placida* occurring on the central Victorian coast (Burn, 1965: in press).

*Placida* is a new generic record for both Australia and Queensland. The species is named for the writer's grandparents, Frank and Lilian Lee, partly through whose generosity the trip to southern Queensland was made possible.

## ORDER NOTASPIDEA

## SUBORDER PLEUROBRANCHACEA

## FAMILY PLEUROBRANCHAEIDAE

### *Pleurobranchaea maculata* (Quoy and Gaimard).

*Pleurobranchidium maculatus* Quoy and Gaimard, 1832:301.
*Pleurobranchaea novaezealandiae* Cheeseman, 1878:276.
*Pleurobranchaea dorsalis* Allan, 1933:445.
*Pleurobranchaea maculatus dorsalis.* Allan, 1950:208.
*Pleurobranchaea novaezealandiae.* Burn, 1957:15.
*Pleurobranchaea maculata.* Burn, 1958:23.

*Material:* South end of Rainbow Bay, Coolangatta, September, 1964, 3 specimens collected from under stones in shallow tide pools. The specimens were not retained.

*Discussion*: *P. maculata* is a new record of genus and species for Queensland. The specimens were a dull reddish brown colour and little more than 25 mm. in length. Victorian and Tasmanian specimens are pale grey in colour and grow to 100 mm. in length.

## ORDER NUDIBRANCHIA

## SUBORDER DORIDACEA

## SECTION EUDORIDACEA

## TRIBE CRYPTOBRANCHIA

## FAMILY DORIDIDAE

### *Rostanga arbuta* (Angas).

*Doris arbutus* Angas, 1864:46, pl. 4, fig. 4.
*Rostanga arbutus.* Allan, 1947:445.
*Rostanga arbutus.* Allan, 1950:221.
*Rostanga arbutus.* Burn, 1957:18.

*Material*: Greenmount and Pt. Danger (Schnapper Rocks), Coolangatta, August, 1964, 3 specimens, crawling on rocks, Q.M. reg. no. MO2957.

*Discussion*: This is a new record of genus and species for Queensland. Though rather smaller than typical Sydney specimens, the present slugs conform in both shape and colour. The species is rather common at both abovementioned localities, crawling over the protected side of rocks and boulders in open positions.

## SUBORDER EOLIDACEA

## TRIBE CLEIOPROCTA

## FAMILY FAVORINDAE

### *Austraeolis ornata* (Angas).

*Flabellina ornata* Angas, 1864:67, pl. 6, fig. 7.
*Flabellina ornata.* Allan, 1950:224.
*Austraeolis ornata.* Burn, 1962:121.

*Material*: Greenmount, Coolangatta, August, 1964, 2 specimens crawling on rocks and boulders, Q.M. reg. no. MO2958.

*Discussion*: This species is already listed from Caloundra, Queensland (Kenny, 1960:224). It is the most common and among the largest eolids of eastern Australia. Details of the anatomy of *A. ornata* and the descriptions of two further species are to be published elsewhere. *A. fucia* Burn (1962:122) from Queenscliffe, Victoria, is probably a mutilated preserved specimen of *Facelina hartleyi* Burn (1962:116). A white body, dark red cerata and six rhinophoral lamellae are common to both species, but the radula and jaws of *F. hartleyi* have yet to be examined.

## FAMILY AEOLIDIIDAE

### *Aeolidiella alba* Risbec.

*Aeolidiella alba* Risbec, 1928:261, pl. 10, fig. 9.
*Aeolidiella alba.* Risbec, 1953:124.

*Material*: South end of Rainbow Bay, Coolangatta, September, 1964, 1 specimen found beneath a stone in shallow tide pool, Q.M. reg. no. MO2959.

*Discussion*: This is a new generic record for Queensland and specific record for Australia. The single specimen was yellowish white in colour and about 10 mm. in length, thus larger than the 6 mm. long unique type. Unfortunately the specimen was ingested by the carnivorous predator *Pleurobranchaea maculata* before any other notes could be made on the living animal. It was later retrieved from the gut of the *P. maculata* by dissection and is now somewhat mutilated.

*A. alba* is a distinctive species easily recognised by the two bulbous dilations of the cephalic tentacles, the two rhinophoral annulae and the white colouration with black speckling on the cerata. It has since been collected at Minnie Waters and Long Reef, New South Wales, and will be fully reported upon elsewhere. *A. japonica* Eliot, 1913 (Baba, 1949:111, 183, pl. 49, fig. 166) is a closely related species, the body colour of which is orange-brown. In Marcus' key to the Aeolidiidae (1961:56), *A. alba* and *A. japonica* come closest to *Spurilla* Bergh, 1864, whose species have perfoliate rhinophores and regularly graded smooth denticles on the radular teeth. Probably generic separation for these two species would be justified (Risbec, 1953) by detailed anatomical studies.

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## EXPLANATION OF FIGURES

*Bulla ovulum.*
Fig. 1a-1b. Dorsal and ventral views of Coolangatta shell.
Fig. 2a-2b. Ditto of ex pisces shell.
Fig. 3. Radula.
Fig. 4. Penis.

*Bulla orientalis.*
Fig. 5. Dorsal view of shell.
Fig. 6. Ventral view of shell.
Fig. 7. Radula.
Fig. 8. Penis.

*Doridium taronga.*
Fig. 9. Dorsal view of living slug.
Fig. 10. Penis.

*Chelidonura conformata.*
Fig. 11. Dorsal view of living slug.
Fig. 12. Penis.

*Elysia australis.*
Fig. 13. Radular tooth.

*Placida fralila.*
Fig. 14. Dorsal view of living slug.
Fig. 15. Radular tooth.

Abbreviations: *a*—rachidian; *b*—penis; *c*—prostate gland or prostatic duct; *d*—penial atrium; *e*—ciliated furrow; *f*—coils of penis; *g*—duct from penial coils; *h*—seminal furrow; *i*—seminal vesicle.

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